

CLAIMS

1. Secure electronic entity (11), characterized in that it contains means (18) for measuring time and in that it comprises means (21) for certifying an item of data relating to a date or a duration, said certification means (21) receiving from said time measuring means (18) information on said date or said duration and producing data certifying said item of data relative to a date or a duration intended for an external entity.

5 2. Secure electronic entity (11) according to claim 1, characterized in that said certification means (21) are adapted to supply a certified date or duration.

10 3. Secure electronic entity (11) according to claim 1, characterized in that said certification means (21) are adapted to certify the authenticity of a date or duration received from the outside.

15 4. Secure electronic entity (11) according to claim 1 or claim 2, characterized in that said certification means (21) are adapted to certify that an action has been effected in a given time period or before a limit date.

20 5. Secure electronic entity (11) according to any one of the preceding claims, characterized in that it further includes synchronization means (18a).

25 6. Secure electronic entity (11) according to any one of the preceding claims, characterized in that said certification means (21) use authentication means.

30 7. Secure electronic entity (11) according to any one of the preceding claims, characterized in that the time measuring means (18) are adapted to supply a measurement of time when said electronic entity (11) is not supplied with power by an external power supply.

35 8. Secure electronic entity (11) according to any one of the preceding claims, characterized in that the time

measuring means (18) are adapted to supply a measurement of time when the electronic entity (11) is not supplied with electrical power.

5 9. Secure electronic entity (11) according to any one of the preceding claims, characterized in that the time measuring means (18) are adapted to supply a time measurement independently of any external clock signal.

10 10. Secure electronic entity (11) according to any one of the preceding claims, characterized in that the time measuring means (18) include means for comparing two dates.

15 11. Secure electronic entity (11) according to any one of the preceding claims, characterized in that it includes at least one subsystem (17) comprising a capacitive component (20) having a leak across its dielectric space, means for coupling said capacitive component to an electrical power supply for it to be charged by said electrical power supply, and means (22) for measuring the residual charge in the capacitive component (20), said residual charge being at least in part representative of the time that has elapsed since the capacitive component (20) was decoupled from the electrical power supply.

20 25 12. Secure electronic entity (11) according to the preceding claim, characterized in that said means (22) for measuring the residual charge are part of said time measuring means (18).

30 13. Secure electronic entity (11) according to either claim 11 or claim 12, characterized in that the capacitive component (20) is a capacitor implemented in the MOS technology and whose dielectric space consists of silicon oxide.

35 14. Secure electronic entity (11) according to claim 11, 12 or 13, characterized in that the means (22) for measuring the residual charge comprise a field-effect transistor (30) having an insulative layer (34), in that

the capacitive component (20) includes an insulative layer (24), and in that the thickness of the insulative layer (34) of the field-effect transistor (30) is much greater than the thickness of the insulative layer (24) of the capacitive component (20).

15. Secure electronic entity (11) according to the preceding claim, characterized in that the thickness of the insulative layer (24) of the capacitive component (20) is from 4 nanometers to 10 nanometers.

10        16. Secure electronic entity (11) according to claim 13, 14 or 15, characterized in that it includes at least two subsystems (17A, 17B) each comprising a capacitive component having a leak across its dielectric space, means for coupling said capacitive component to an electrical power supply for it to be charged by said electrical power supply, and means for measuring the residual charge in the capacitive component, said residual charge being at least in part representative of the time that has elapsed since the capacitive component was decoupled from the electrical power supply, said subsystems (17A, 17B) comprising capacitive components having different leaks across their respective dielectric spaces, and in that said secure electronic entity (11) further includes means (14, 15, T) for processing measurements of the respective residual charges in said capacitive components to extract from said measurements information substantially independent of heat input to said entity (11) during the elapsed time.

30        17. Secure electronic entity (11) according to the preceding claim, characterized in that said processing means (14, 15, T) include software for calculating a predetermined function for determining said information as a function of said measurements substantially independently of the heat input.

35        18. Secure electronic entity (11) according to any

one of the preceding claims, characterized in that it is portable.

19. Secure electronic entity (11) according to any one of the preceding claims, characterized in that it is a  
5 microcircuit card.